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SLIDE GENERATION PACKAGE USERS MANUAL

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TRADOC ANALYSIS COMMAND - FORT LEAVENWORTH

(TRAC - FLVN)

OPERATIONS DIRECTORATE

FORT LEAVENWORTH, KANSAS 66027

88 11 3 122

Technical Memorandum TRAC-F-TM-0688
June 1988

TRADOC Analysis Command - Fort Leavenworth (TRAC-FLVN)
Operations Directorate
Technology Applications Branch
Fort Leavenworth, Kansas 66027

SLIDE GENERATION PACKAGE
USERS MANUAL

Compiled and Edited by
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ACN 48722

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution is unlimited	
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE				
4. PERFORMING ORGANIZATION REPORT NUMBER(S) TRAC-F-TM-0688			5. MONITORING ORGANIZATION REPORT NUMBER(S)	
6a. NAME OF PERFORMING ORGANIZATION TRAC-FLVN		6b. OFFICE SYMBOL (if applicable) ATRC-FOC	7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) Commander TRAC-FLVN (ATTN: ATRC-FOC) Ft Leavenworth, KS 66027-5200			7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING / SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (if applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS	
			PROGRAM ELEMENT NO.	PROJECT NO.
11. TITLE (Include Security Classification) Slide Generation Package Users Manual				
12. PERSONAL AUTHOR(S) SPC M. Chenault				
13a. TYPE OF REPORT Final Report		13b. TIME COVERED FROM 6-88 TO 8-88	14. DATE OF REPORT (Year, Month, Day) August 1988	15. PAGE COUNT 24
16. SUPPLEMENTARY NOTATION				
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) <p>The acquisition of Seiko color copiers brought to light the need for a simple, user friendly slide generation software package. This package is designed to be as generic as possible regarding the VAX/Ramtek environment of TRAC. The main features that show this flexibility are its ability to accept any color/overlay configuration and the incorporation of pull down menus with the Macro-FLIK software.</p> <p>Slides or pictures may be loaded, modified and resaved at any time or stage of development. This would allow the actual merging of maps or other displays with text and other graphic aids. The significance of this from a presentation standpoint cannot be overemphasized.</p> <p><i>SPC M. Chenault, TRAC-FLVN</i></p>				
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL SPC M. Chenault			22b. TELEPHONE (Include Area Code) (913) 684-3193	22c. OFFICE SYMBOL ATRC-FOC

ACKNOWLEDGEMENTS

The original idea of this package was derived from the VIC Input Preprocessor (VIP) software package. The primary authors of which are Jim Lankford and Linda Stead. Though most of the extracted routines have been heavily modified and bear little resemblance to their VIP counterparts, a few still survive in their original forms.

The concept and creation of the pull down menu package, which is in full use here, belongs to R. Pete Kaeding of the Technology Applications Branch Graphics Team. This package is fully incorporated into the Macro-FLIK software, described in Technical Memorandum TRAC-F-TM-1473 (also a TAB product), with a heavy emphasis on being as generic as possible so as to provide maximum flexibility.



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ABSTRACT

The acquisition of Seiko color copiers brought to light the need for a simple, user friendly slide generation software package. This package is designed to be as generic as possible regarding the VAX/Ramtek environment of TRAC. The main features that show this flexibility are its ability to accept any color/overlay configuration and the incorporation of pull down menus with the Macro-FLIK software.

Slides or pictures may be loaded, modified, and resaved at any time or stage of development. This would allow the actual merging of maps or other displays with text and other graphic aids. The significance of this from a presentation standpoint cannot be overemphasized.

1. Purpose. This manual provides the necessary information to properly operate the Slide Generation Package running on a DEC VAX and a Ramtek graphics engine interface.

2. Scope. This guide is designed to provide the user with all necessary procedures to create color graphic slides. For information on overlay and color file creation, see appendix A. If more information is required, see the Macro-FLIK User's Manual (Technical Memorandum TRAC-F-TM-1473).

3. Overview. The package is divided into six distinct sections corresponding to six sub-menu displays. Each of these sub-menus and the main pull down menu can be seen in appendix B.

a. The first section, "DRAW", contains all of the available figures that the user can create and display to the Ramtek monitors.

b. The second section is labeled "COLORS". This section contains the menu for selection of colors and drawing planes. Also contained in this menu is the edit colors option.

c. The third section is labeled "OPTION". This is where the user will find the options to fill shapes, select text size, direction, and several other options discussed in paragraph 4.

d. The fourth section is labeled "FILES". It is within this menu that the user finds the options to load a previously created picture or to save the current picture. The same applies to color files.

e. The fifth section is labeled "ERASE". This section contains the options available to the user in erasing all, or a portion of the screen or of the slide menus.

f. The last section is labeled "DELETE". This menu contains the options to delete the last item "drawn" of a specific type (e.g. rectangle, circle, etc.).

4. Operation. The slide generation package is a user friendly graphics package allowing the construction/modification of slides, pictures, or maps using a predefined or dynamically generated color file configuration.

The startup procedure requires that the user know only which Ramtek channel he wishes to use and then to answer three Macro-FLIK prompts (see appendix A or the Macro-FLIK User's Manual for more information on these prompts). The following is an example of the execution procedure. User input will be enclosed with <>, <cr> means a carriage return.

```

$ <RUN OSLIDE:SLIDE>
KRMINIT: enter Ramtek logical (like RMA0:) <RMB0:>
Draw graphics to Ramtek? [Y/N] [Y] <cr>
Save graphics to Meta-file? [Y/N] [N] <cr>
Erase screen? [Y/N] [Y] <cr>
LO-RES Z-80      Ramtek as moni      1 RMB0:
Reload status from a previous run? [Y/N] [N] <cr>
Color file: NEW [N], OLD [O], DEFAULT [D]? <cr>
Do you want to see your color scheme? [Y/N] [N] <cr>

```

The package is now running using the default color/overlay file (see appendix A) and awaiting user selection from the top menu.

a. Draw. Selection from this area displays the pull down menu containing the available drawing types. All "draws" are made in the selected current drawing color (see b(1)). If the "FILL ON" (see c(1)) option has been selected, all shapes drawn from that point on will be filled. The sub-menu and pop-up menus of this section can be seen in appendix B-1.

(1) Rectangle. Selection of this option returns the prompt, "SELECT ONE CORNER OF RECTANGLE" to the CRT. At this time, you select your first point. A dot will appear at the selected point in the current drawing color. This marks one corner of your rectangle. The next prompt the user sees is "STRETCH RECTANGLE TO OPPOSITE CORNER & PUSH BUTTON". As you move the cursor in any direction, a rectangle will grow (or shrink accordingly). When the rectangle is of the proper size, depress the puck button and the completed rectangle will be displayed.

(2) Circle. Selection of this option returns the prompt, "USE CURSOR TO LOCATE CENTER OF CIRCLE" to the CRT. After selecting the circle's center, a dot will appear at that point. This is just for the user's reference and will be erased upon completion of the circle. After the center point has been selected, the next prompt is to "STRETCH CIRCLE TO DESIRED SIZE & PUSH BUTTON". As you move the cursor in any direction, a circle will grow (or shrink accordingly). When the circle is of the proper size, depress the puck button and the completed circle will be displayed.

(3) Ellipse. Selection of this option returns the prompt "ENTER ELLIPSE CENTER" to the CRT. Using the cursor, pick a point for the ellipse center. A dot will be drawn showing the selected spot. The next prompt is to "STRETCH RECTANGLE TO FULL ELLIPSE SIZE & PUSH BUTTON". As you move the cursor in any direction, a rectangle representing the approximate size of the ellipse will grow (or shrink accordingly). When the rectangle is of the proper size, depress the puck button and the completed ellipse will be displayed.

(4) Line. Upon selection of this option, a box will be displayed in the upper left-hand corner of the screen containing the word "STOP". The user is prompted to "SELECT FIRST POINT ON THE LINE". When finished drawing lines, the user selects the box with the cursor. Until stop is selected, each successive point will be connected to the previous point by a line segment. This gives the user the power to create as many connected lines as desired. As the cursor moves, the line follows the position of the cursor until the final position is selected and the finished line is drawn.

(5) Polygon. This option operates in exactly the same way as "line" draw with the following exceptions. Upon selection of the stop box, the last point and the first point are connected by a line eliminating the necessity of closing the polygon. The other difference between polygon and line draw is the ability to fill polygons.

However, there is a fill problem with irregular polygons (those with sides intersecting at other than their endpoints). This is due to the Ramtek fill technique. In the case of the irregular polygon, there may be several closed sections which defeats this parameter of the fill command. To complete the fill of this type of polygon the user may select the "FILL FROM CURSOR" option (see paragraph c(2)).

(6) Text draw. Selection of this option returns the prompt, "ENTER TEXT STRING" to the CRT. At this time, any string up to 40 characters can be entered; hit the return key when finished. The text is displayed on the monitor and can be moved by moving the cursor to the desired location. The CRT prompt to the user is "POSITION TEXT & PUSH PUCK BUTTON".

b. Colors. Moving the cursor to this area will display the pull down submenu showing the selections available. The sub-menu and pop-up menus of this section can be seen in appendix B-2.

(1) Sel color. Upon selection of this option, a second menu will be drawn on the right-hand side of the screen. This menu will contain all colors available for the current drawing buffer. The CRT will prompt the user to "SELECT FROM RIGHT MENU". Upon selection of a color from that menu, that color now becomes the current drawing color. The menu erases from the screen and operation will proceed from the pull down menus.

(2) Sel buffer. Upon selection of this option, a menu will appear in the middle of the screen (hereafter referred to as a pop-up menu.) This menu displays all available buffers in which the user can draw. It is not possible for the user to select the buffer in which the pull down menus are drawn. A higher numbered buffer will overlay (draw on top of) a lower one. Upon selection of a buffer from the pop-up menu, this buffer now becomes the

current drawing buffer for any new shape or text creations. The pop-up menu erases from the screen and operation will proceed from the pull down menus.

(3) Edit colors. Upon selection of this option, a pop-up menu will be displayed warning the user that continuation with this option will erase the screen. The user must then make a selection from this pop-up menu to "CONTINUE" or "CANCEL". Upon selection of the cancel option, the pop-up menu is erased and control is back at the main menu.

If the continue option is selected, the screen is erased and the current color configuration is drawn (see Appendix B). Until the user exits this option, all prompts will be displayed at the bottom of the Ramtek monitor. The first prompt to appear is "DO YOU WISH TO MAKE ANY CHANGES?" and a box containing a "YES" or "NO" selection area. If "NO" is selected, the screen will erase and control is returned to the main menu. Otherwise, input will continue on this option with the next prompt being "SELECT COLOR TO CHANGE" and a box containing the "KEY WHEN FINISHED" prompt. It is this box that the user selects when finished editing.

The user selects the color to change. This color is then redrawn in a larger area on the right hand side of the screen and at the same time the current intensities of red, green, and blue comprising that color are displayed. The user is now prompted to "EDIT USING COLOR BARS". Pick the new intensity of color and it is immediately reflected on the screen. To end the edit phase, select the "KEY WHEN FINISHED" box and you return to the previous prompt.

c. Options. Moving the cursor into this area will display the menu options. The sub-menu and pop-up menus of this section can be seen in appendix B-4.

(1) Fill on/off. The default value for the fill toggle is off. This option controls whether or not your geometric shapes are filled. To change the fill status, select this option. If the box says "FILL ON", selecting this will turn fill on and now the box will display "FILL OFF". The same procedure is true for the reverse case.

(2) Fill from cursor. This option gives the user the ability to fill unfilled shapes or change the color of a currently displayed item. Upon selection of this option, a menu will appear in the middle of the screen. This gives the user a choice of two types of fills. The option "FILL TO ANY DIFF COLOR" means to fill in the current drawing color until it encounters any color other than the color of the area touched. The second option, "FILL TO DRAWING COLOR", means to fill until it encounters the current drawing color. After the user selects the color to draw in, select the area to fill.

(3) Text size. Upon selection of this option, a second menu will be drawn on the right-hand side of the screen. This menu will contain all available text sizes (1-16 with 16 being the largest) for subsequent text draws. Next to the numbers 4, 8, 12, and 16 a letter X is drawn as a sample of that text size. This gives the user some idea of the size of the text selected. The CRT will prompt the user to "SELECT FROM RIGHT HAND MENU". Upon selection of a number from that menu, that now becomes the current text size. The menu erases from the screen and operation will proceed from the pull down menus. (Approximately 11 size-16 characters will fit horizontally on the screen, 23 of size 8, and 92 of size 1. Vertically, these numbers become 7, 14, and 57.)

(4) Text dir. Upon selection of this option, a menu will appear in the middle of the screen (hereafter referred to as a pop-up menu). This menu displays all four of the available text directions in which the user can write. (An example of each can be seen in appendix B.) These being:

LEFT TO RIGHT
TOP/BOT-FACE UP
BOT/TOP-FACE LEFT
TOP/BOT-FACE RIGHT

Upon selection of a text direction from the pop-up menu, this direction now becomes the format for any new text creations. The pop-up menu erases from the screen and operation will proceed from the pull down menus.

(5) DCL command. Upon selection of this option, control is turned over to the CRT which prompts the user to "ENTER DCL COMMAND (80 CHARACTERS) <RET> TO END". At this time, the user is free to enter DCL commands from the keyboard without exiting the slide generation package. Any number of commands can be entered but the first one must be completed before entering the second and so on. Upon completion of all commands the user wishes to do in this mode, enter carriage return. At this point, the CRT will prompt the user to "SELECT FROM DISPLAYED MENUS" and control is returned to the pull down menus.

(6) Move/duplicate. Upon selection of this option, a menu will appear in the middle of the screen (hereafter referred to as a pop-up menu). This menu displays the options available to the user with the duplicate command (discussed separately below). The pop-up menu erases from the screen and operation proceeds from the pull down menus.

(a) Move/no erase. Selection of this option from the pop-up menu will allow the user to literally duplicate any object on the screen elsewhere on the screen with no effect on the original. Upon selection of the lower left corner, a

rectangle will grow encompassing the area the user wishes to copy. Depress the puck button to complete your selection.

(b) Move/erase. Selection of this option from the pop-up menu will allow the user to literally move any object on the screen elsewhere on the screen. Upon selection of the lower left corner, a rectangle will grow encompassing the area the user wishes to move. Depress the puck button to complete your selection.

(c) Cancel. Selection of this option from the pop-up menu will provide the user with an escape route back into the pull down menu mode without modifying the display.

(7) End. Selection of this option ends the slide software.

d. Files. This menu group is for the manipulation of files. Moving the cursor into this area will display the following menu options. The sub-menu and pop-up menus of this section can be seen in appendix B-5.

(1) Load colors. Upon selection of this option, the user is prompted on the CRT to "LOAD COLOR FILE NAME". After entering this file name and hitting the return key, a loaded picture is updated with the new color file information. For more information, see paragraph 5b, Error messages.

(2) Save colors. Upon selection of this option, the user is prompted on the CRT to "SAVE COLOR FILE NAME". After entering this file name and hitting the return key, the color/overlay configuration currently in operation is saved in the file name the user entered. For more information, see paragraph 5b, Error messages.

(3) Load pic. Upon selection of this option, the user is prompted on the CRT to "ENTER PICTURE FILE NAME TO LOAD". At this time, enter the file name of a picture file and hit the return key. (Picture files by default have the .PIC extension). The requested picture will be loaded but displayed using the color file currently loaded in the slide program. For more information, see paragraph 5b, Error messages.

[Note: It is advised that if pictures are to be saved and were created using a specific color file (i.e., not the default values), the color file should be saved also. This is done with the save colors option.]

(4) Save pic. Upon selection of this option, the user is prompted on the CRT to "ENTER PICTURE FILE NAME TO SAVE". At this time, enter the file name you wish to save the picture under and hit the return key. (Picture files will be automatically saved with the .PIC extension.) The pull down menus are erased

when this option is selected in order to avoid saving unwanted menus. When the save is completed, the pull down menu is redisplayed.

e. Erase. This menu group is for the removal of all, or part of, the Ramtek display. Moving the cursor into this area will display the following menu options. The sub-menu and pop-up menus of this section can be seen in appendix B-6.

(1) Erase screen. Upon selection of this option, a menu will appear in the middle of the screen (referred to as a pop-up menu). This menu displays the options available to the user with the erase screen command (discussed separately below). The pop-up menu erases from the screen and operation proceeds from the pull down menus.

(a) Erase buffer. Each buffer is numbered. The lowest buffer (i.e. buffer 1) is renamed the "BOTTOM BUFFER". Each successive buffer retains its number and the highest numbered buffer is renamed the "TOP BUFFER". This allows the user to selectively erase the contents of a single buffer without affecting the rest of the display. For more information on buffering, see APPENDIX A, color file creation.

(b) Erase all buffers. Upon selection of this option, the entire screen is cleared and the pull down menus are redrawn.

(c) Cancel. Erases the pop-up menu and leaves the display unaltered. Control is back with the pull down menus.

(2) Erase menu. This command was designed with the idea that the user would not want the menus displayed when making copies of slides on the Seiko color copiers. All of the pull down menus are erased and the CRT prompts the user to "ENTER COMMAND (? = HELP)". At this time, several options (detailed below) are available to the user and by entering a "?" and hitting the return key, these will be explained on the CRT.

(a) Erase. This command will clear the entire Ramtek screen and leave the user in the CRT mode with the prompt "ENTER COMMAND (? = HELP)".

(b) Restore. This command will return the user to the pull down menus and operation will continue as before the erase menu or erase cursor command was entered.

(c) End. This command stops the application and returns the user to the DCL prompt.

(3) Erase cursor. This option performs exactly like the erase menu command with the exception that the cursor is also removed from the Ramtek display. All CRT prompts remain the same.

(4) Erase area. Allows the user to erase a selected portion of the display using an expandable rectangle. This will erase the specified area on all buffers.

f. Delete. An optional form of erasing, this menu allows the user to erase the last item of a specific type drawn whether filled or unfilled, however, shapes filled "after-the-fact" using the "FILL FROM CURSOR" option will not be deleted. Moving the cursor into this area displays the following options. The sub-menu and pop-up menus of this section can be seen in appendix B-5.

(1) Last rect. Will erase the last rectangle drawn, either filled or unfilled.

(2) All others. Since all the options in this menu perform exactly the same as the "LAST RECT" option, the others are only listed here in the order that they appear on the screen.

- Last circ
- Last line
- Last text
- Last elip
- Last poly

5. Error messages. Several error messages can be seen by the user during the execution of the slide-generation package. These are not fatal errors (those causing the program to halt) but simply informative prompts to advise the user that what he has done is not in accordance with defined procedure.

a. Macro-FLIK message. This message occurs when an incorrect action has been chosen from the Macro-FLIK package. The following is an example of such a message:

DONT PUSH BUTTON UNTIL YOUVE PULLED DOWN A MENU.

This message refers to the fact that the puck button has been pushed but the cursor is not in a menu area which is active. No action has been taken. Move the cursor to the proper place and continue operation.

b. Slide package messages. These messages occur when an incorrect or mistyped command is entered. No action has been taken and the command used is canceled. If the user still wishes to execute that command, it must be reentered from the pull down menus. The following are examples and explanations of those messages found in the slide generation package:

COLOR SAVE FILE DOES NOT EXIST.
PICTURE FILE DOES NOT EXIST (FILENAME) .PIC

These messages refer to the fact that the file name entered

does not exist. The most probable cause of this error is incorrect spelling of the file name. Recheck the file name and re-enter the command from the pull down menu.

BAD INPUT -- TRY AGAIN.

This message arises from the mode discussed under the ERASE MENU option. Recheck command spelling or enter a "?" for a list of valid commands.

APPENDIX A
Color File Creation
(extracted and revised from the Macro-FLIK User's Manual)

Before communication can be established with one of our Ramtek color monitors, the user must execute a series of initialization routines. These range from opening and assigning a channel to the Ramtek controller and associating the appropriate monitor and graph tablet with your workstation, to defining and loading colors into the Ramtek video lookup table (VLT) for later reference. Macro-FLIK simplifies this procedure by requiring the application programmer to call only one routine, one time, and with no calling arguments.

a. INIT_RAMTEK. Calling format:

CALL INIT RAMTEK

This routine performs all of the necessary initialization to establish the link between user terminal and graphics work station based on several interactive queries of the user. The queries (in bold type), typical response, and discussion of possible responses are shown below.

Draw graphics to Ramtek? [Y/N] [Y] <cr>

In certain applications, the Ramtek might not be used and this option allows this "non-use". The default value is, of course, "YES" as the alternative will occur only rarely.

Save graphics to Meta-file? [Y/N] [N] <cr>

This option is of interest only to those working with VIC playback and is beyond the scope of this document.

Erase screen? [Y/N] [Y] <cr>

This option allows the use of a currently displayed picture. It allows the picture to be modified within this application as if it had been loaded from the "LOAD PIC" command.

KRMINIT: ENTER Ramtek logical (like RMA0:) RMB0:

The user is expected to enter the four-character logical associated with the particular work station (there is a label on each workstation at TRAC-FLVN Central Computer Facility (CCF) and Wargame Computer Facility (WCF)).

Following this there are three new prompts as shown on page 2.

Reload status from a previous run? [Y/N] [N] <cr>

Appropriate responses are Yes or No. This option allows the user to reload the status of curve displays for review/modification. Typically the user's response will be No. For more information, see Macro-FLIK manual, paragraph 6a.

Color file: NEW [N], OLD [O], DEFAULT [D]? <N>

The first time this software is executed, the user will likely select responses New or Default. Typically thereafter, the Old option would be selected to use a previously created and saved color file. The prompts which follow are a result of having selected the New option. Had the user selected Default, the next prompt to appear would be the "SAVE THE COLOR FILE JUST CREATED?" prompt (discussed below). Had the user selected Old, he would be prompted to enter the file name of that old color file, followed by the prompt "DO YOU WANT TO SEE YOUR COLOR SCHEME?" (discussed below).

(1) Building a color file. Prior to continuing the discussion of remaining prompts and responses, it's necessary to provide the user with at least a cursory understanding of color file production.

The Macro-FLIK color scheme generation software is more sophisticated than it needs to be. For the typical application, the user should simply specify one buffer and build an ample number (current software restriction is 32) of colors by responding to the prompts that follow. However, the capability exists for the educated user to devise a sophisticated overlay scheme. That procedure is described in more detail in the following paragraphs.

Current TRAC Ramtek hardware is configured with anywhere between eight and sixteen usable refresh memory planes per station which will allow addressing a maximum of 256 ($2^{*}8$) to 65,536 ($2^{*}16$) colors loaded into the video lookup table (VLT). By cleverly loading the VLT and sacrificing colors, an overlaying effect can be achieved. This clever loading (the details of which are beyond the scope of this manual) is accomplished for the user by a FLIK routine which requires that the user define the color scheme in terms of overlay buffers and colors within each buffer. A buffer consists of a number of refresh memory planes where each plane provides an additional power of two-color capacity. This means that a buffer consisting of three planes would allow the user to load eight colors ($2^{*}3$). Of course, the advantage to such a buffering/overlay scheme is that graphics drawn in any buffer can be "hidden from view" by drawings in a higher number buffer, but become visible again once the higher buffer drawings are erased.

Currently, the Macro-FLIK software restricts the user to eight buffers using as many planes as are available at his current work station (but, as mentioned previously, limited to a maximum of five planes per any one buffer). Of course, a single buffer would provide no overlays, simply the generation of thirty-two colors (five planes or 2×5 colors). The responses made to the sample prompts below would create an overlay scheme consisting of 3 overlay buffers of 32, 2, and 4 colors (5, 1, and 2 planes) respectively.

If the user plans to incorporate pull-down/pop-up menus (see paragraph 7), the software will generate a temporary top level "artificial" buffer of 2 planes (if available at the current station; otherwise, the user is warned that graphics drawn in his top buffer may be "overdrawn" if he uses pull-down/pop-up menus). It is in this temporary buffer that these special menus are drawn, thus allowing them to overlay the user's graphics work without (except in the case just mentioned) ill effect. The pull-down/pop-up grid, text, and highlight colors respectively will be duplicates of the first three colors (excluding the "clear" color number 1) in the user-generated top buffer.

For example: If the user, in responding to the sample prompts below, selected colors red, green, and blue as his three colors in buffer number 3 (his top buffer), and then chose to use pull-down menus in his software, the menus would appear with green text on a red background (grid) and upon selection would be highlighted in blue (not a pretty sight). If the user's current work station has more than the eight planes used in this color file definition available, a temporary buffer 4 will be generated with those three colors. If, however, this station has only eight planes available, then the pull-downs/pop-ups will be drawn in buffer number 3, effectively erasing the user's graphics drawn in that buffer. Although the software doesn't prohibit this type of potential damage, it does warn the user at initialization.

The following prompts actually appear on the Ramtek monitor, and, consequently, the user's responses are entered via the graph tablet and puck. For this reason, I've chosen to show the response(s) in < >.

SELECT NUMBER OF OVERLAY BUFFERS <3>

Hardware limit (practically speaking) is 8. Entering 1 is acceptable, but implies no "overlying."

SELECT # OF PLANES IN OVERLAY BUFFER #1 <5>

This prompt will obviously appear for each buffer. Current

software limit is 32 colors (five planes as in this example) per buffer. As discussed in para 3a(3), the user is limited to the number of planes available at his current station and a total of eight buffers.

SELECT # OF PLANES IN OVERLAY BUFFER #2 <1>

SELECT # OF PLANES IN OVERLAY BUFFER #3 <2>

Note the total number of planes for all buffers is at most (in this case, exactly) eight.

OVERLAY BUFFER CONFIGURATION

SELECT COLORS USING CURSOR

An empty matrix representing the user-specified color scheme is displayed at this time, along with a color pallet of available colors from which the user may select. An "X" appears in each matrix color box and is replaced by the color selected from the pallet as the user progresses through his color scheme definition.

DO YOU WISH TO MAKE ANY CHANGES? <Y>

Appropriate "selections" are Yes or No. If the user selects No, the next prompt to appear will be the "SAVE THE COLOR FILE..." prompt.

SELECT COLOR TO CHANGE

The user selects, via the graph tablet and puck, the box in his (now filled) color matrix which contains the color to be changed.

SELECT NEW COLOR FROM PALLET

The user similarly selects from the color pallet the replacement color. These two prompts are repeated until the "key when finished" box is selected.

SAVE THE COLOR FILE JUST CREATED? Y

ENTER COLOR FILE NAME (NO EXTENSION) COLORFILE

START OVER? N

Appropriate responses are Yes or No. If the user selects Yes, this option allows him to build another color file by clearing his color matrix and recycling starting with the "SELECT NUMBER OF OVERLAY BUFFERS" prompt.

DO YOU WANT TO SEE YOUR COLOR SCHEME? N

Appropriate responses are Yes or No. If the user selects Yes, his color scheme is listed to the CRT.

APPENDIX B

Menu Representation

DRAW COLORS OPTION FILES ERASE DELETE

Main pull down menu

DRAW
RECTANGLE
CIRCLE
ELLIPSE
LINE
POLYGON
TEXT DRAW

COLORS OPTION FILES ERASE DELETE

Draw sub-menu

DRAW# COLORS OPTION FILES ERASE DELETE
SEL COLOR
SEL BUFFER
EDIT COLORS

Colors sub-menu

BOTTOM BUFFER
2ND BUFFER
TOP BUFFER

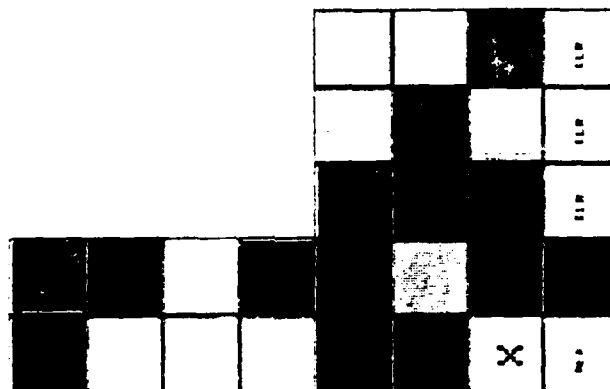
Sel buffer pop-up

WARNING-WILL ERASE
ALL USER OVERLAYS!
CONTINUE
CANCEL

Edit colors warning pop-up

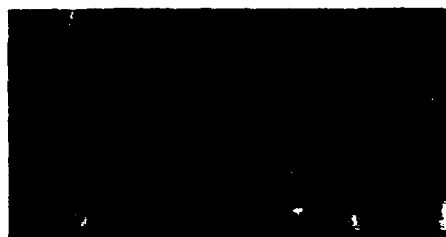
DRAW COLORS OPTION FILES ERASE DELETE

RED GREEN BLUE
 LOWER
 HIGHER



1 2 3 4

Edit colors display



EDIT COLOR USING COLOR BARS

KEY WHEN
 FINISHED

DRAW COLORS OPTION FILES ERASE DELETE

FILL ON
FILL FROM CURSOR
TEXT SIZE
TEXT DIR
OCL COMMAND
MOVE/ DUPLICATE
END

Option sub-menu

FILL TO ANY DIFF COLOR
FILL TO DRAWING COLOR
CANCEL

Fill from cursor pop-up

BOT/TOP-FACE LEFT

TOP/BOT-FACE RIGHT

LEFT TO RIGHT
TOP/BOT-FACE UP
BOT/TOP-FACE LEFT
TOP/BOT-FACE RIGHT

LEFT TO RIGHT

T
O
P
/
B
O
T
-
F
A
C
E

U
P

Text dir pop-up

MOVE/ NO ERASE
MOVE AND ERASE
CANCEL

Move/duplicate pop-up

DRAW * * * COLORS * * * OPTION * * * FILES ERASE DELETE

LOAD COLORS
SAVE COLORS
LOAD PIC
SAVE PIC

Files sub-menu

DRAW * * * COLORS * * * OPTION * * * FILES ERASE DELETE

LAST RECT
LAST CIRC
LAST LINE
LAST TEXT
LAST ELLIP
LAST POLY

Delete sub-menu

DRAW	*COLORS	OPTION	FILES	ERASE	DELETE
				ERASE	SCREEN
				ERASE	MENU
				ERASE	CURSOR
				ERASE	AREA

Erase sub-menu

BOTTOM BUFFER
2ND BUFFER
TOP BUFFER
ALL BUFFERS
CANCEL

Erase screen pop-up

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